OBSERVATIONS AT HONOLULU.

Through the kind cooperation of Mr. Curtis J. Lyons, Meteorologist to the Government Survey, the monthly report of meteorological conditions at Honolulu is now made nearly in accordance with the new form, No. 1040, and the arrangement of the columns, therefore, differs from those previously published.

Meteorological observations at Honolulu.

APRIL, 1899.

The station is at 21° 18′ N., 157° 50′ W.
Pressure is corrected for temperature and reduced to sea level, and the gravity correction, —0.06, has been applied.
The average direction and force of the wind and the average cloudiness for the whole day are given unless they have varied more than usual, in which case the extremes are given. The scale of wind force is 0 to 12, or Beaufort scale. Two directions of wind, or values of wind force or amounts of cloudiness, connected by a dash, indicate change from one to the other.
The rainfall for twenty-four hours is now given as measured at 1 p. m. Greenwich time on the respective dates.
The rain gauge, 8 inches in diameter, is 1 foot above ground. Thermometer, 9 feet above ground. Ground is 43 feet, and the barometer 50 feet above sea level.

Date.	Pressure at sea level.	Temperature.		During twenty-four hours preceding 1 p. m., Greenwich time, or 2:30 a. m., Honolulu time, of the respective dates. ‖									
				Temperature.		Means.		Wind.		Total rainfall.	Average cloudiness.	Sea-level pressures.	
		Dry bulb.	Wet bulb.	Maximum.	Minimum.	Dew-point.	Relative humidity.	Prevailing direction.	Force.			Maximum.	Minimum.
	*	†	†			‡	‡		§				
1	30.00	72	63.5	80	72	62.0	62	ne.	3	0.00	3	30.13	30.08
2	29.98	69	64.5	81	71	60.7	62	ne.	3-1	0.00	2	30.06	29.96
3	29.98	70	64	80	67	62.3	70	ne.	3-1	0.01	2	30.04	29.96
4	29.96	71	65	81	68	62.3	66	ne.	2	0.04	4	30.03	29.96
5	29.96	72	65	79	68	63.7	72	ne-nne.	2-4	0.01	3	30.03	29.95
6	29.95	71	65	80	70	61.7	65	ne.	2-4	0.08	4	30.03	29.94
7	29.98	68	64	79	69	63.3	69	nne.	4	0.13	6	30.03	29.94
8	30.06	68	63	74	66	58.0	64	nne.	0-6	0.04	5-2	30.06	29.95
9	30.05	68	60	73	66	60.0	71	ne-n.	5-2	0.12	8	30.12	30.04
10	30.08	70	63	76	66	55.7	58	nne.	5	0.00	4	30.15	30.07
11	30.05	70	63.5	79	69	58.7	63	ne.	4	0.04	5	30.15	30.07
12	30.07	70	65	79	66	61.5	67	ne.	3	0.01	3	30.12	30.08
13	30.05	72	64	80	68	62.7	69	ne.	3	0.01	4	30.13	30.06
14	30.05	71	64	81	70	58.5	58	nne.	3	0.07	2	30.11	30.03
15	30.06	71	63.5	78	67	61.0	65	ne.	3-5	0.16	7	30.11	30.04
16	30.10	72	65	79	67	60.5	62	ne.	5	0.01	5	30.14	30.06
17	30.08	71	64.5	77	70	61.7	68	ne.	4	0.06	5	30.15	30.07
18	30.00	71	64	79	69	60.7	64	ne.	4-5	0.01	4	30.12	30.01
19	30.00	71	63.5	80	70	60.7	63	nne.	4	0.00	3	30.05	29.98
20	29.98	62	61	79	70	62.0	69	ne.	3	0.15	3-8	30.06	29.98
21	29.91	61	58.5	81	61	62.3	73	w.	1-0	0.00	2-6-0	30.08	29.95
22	29.89	63	61	79	59	60.0	74	w-s.	1-0	0.00	0-6	29.97	29.87
23	29.85	64	62	78	61	60.7	78	sw.	1-0	0.00	3	29.93	29.84
24	29.85	71	66	80	61	61.7	71	sw-s.	1-0	0.01	2	29.90	29.83
25	29.93	71	67	82	65	64.3	70	se.	1	0.06	8-3	29.98	29.88
26	29.98	69	67	82	69	66.0	74	nne-s.	3-0	0.00	6	30.03	29.95
27	29.98	72	68	81	66	66.5	75	se.	1-0	0.00	9	30.04	29.97
28	29.99	71	69	80	67	67.3	77	e-s.	1-3-0	0.05	8	30.05	29.95
29	30.00	69	66.5	79	67	66.7	76	se.	1-0	0.00	8	30.02	29.96
30	30.04	70	67	82	66	66.0	74	sw-e.	1	0.00	3-8	40.07	30.00
Sums.	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.07	.....	.....	.....
Means.	29.995	69.3	64.2	79.3	67.0	62.0	68.1	.....	2.6	....	4.7	30.061	29.978
Departure.	0.000	.....	.....	.....	.....	—1.3	—3.5	.....	.....	—1.94	.....	.....	.....

Mean temperature for April, 1899 (6+2+9)+3=72.7°; normal is 72.8°. Mean pressure for April is 30.015; normal is 30.018.
*This pressure is as recorded at 1 p. m., Greenwich time. †These temperatures are observed at 6 a. m., local, or 4:30 p. m., Greenwich time. ‡These values are the means of (6+9+2+9)÷4. §Beaufort scale.
‖Possibly this record is for 9 a. m., Honolulu time.

MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of the Central Meteorologico-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in advance of their publication in the *Boletin Mensual*. An abstract, translated into English measures, is here given, in continuation of the similar tables published in the MONTHLY WEATHER REVIEW since 1896. The barometric means have not been reduced to standard gravity, but this correction will be given at some future date when the pressures are published on our Chart IV.

Mexican data for April, 1899.

Stations.	Altitude.	Mean barometer.	Temperature.			Relative humidity.	Precipitation.	Prevailing direction.	
			Max.	Min.	Mean.			Wind.	Cloud.
	Feet.	*Inch.*	°*F.*	°*F.*	°*F.*	%	*Inch.*		
Colima	1,600	28.26	92.8	54.1	78.1	65	T.	sw.	sw.
Culiacán Rosales (E. d. S.)	112	29.73	93.2	53.6	77.9	54	.....	w.	n.
Durango (Seminario)	6,243	27.96	91.4	38.1	66.2	35	.....	sw.	w.
Leon (Guanajuato)	5,934	24.27	92.1	45.3	70.2	29	0.04	sw.	sw.
Linares (N. Leon)	1,188	28.67	102.2	50.0	74.3	59	1.97	sse.	sse.
Mexico (Obs. Cent.)	7,472	23.04	87.6	39.2	63.5	39	0.12	nw.	sw.
Morelia (Seminario)	6,401	23.95	86.9	46.6	65.8	48	T.	sw.	w.
Puebla (Col. Cat.)	7,112	23.33	84.2	39.2	66.0	60	0.38	e.	wsw.
Queretaro	6,070	24.18	94.6	43.2	67.6	39	0.18	e.	.....
S. Isidro (H. de Guanajuato)	.....	.....	82.4	62.6	.....	.....	T.	w.	.....
Siloa	6,063	24.25	87.4	52.9	71.2	45	T.	sw.	w.
Tuxpan	19	30.03	105.4	54.0	77.9	42	0.79	e.	s.
Zapotlan (Seminario)	5,078	25.09	87.6	45.1	70.7	61	0.01	so.	w.

LONG-RANGE WEATHER FORECASTING IN CANADA.

By JAMES GUN, Durham, Ontario, Canada.

In the concluding portion of a very interesting article on Recent Science in the March number of the Nineteenth Century, Prince Kropotkin asks the question, whether it is possible to foretell the weather several days, or maybe weeks, in advance. Popular wisdom, he adds, has always said yes to this question, and remarks, that—

When the Greeks say that the autumn and winter months are months of gales, or the Northwest Canadians predict a spell of warm and dry weather after a snowstorm of short duration has blown early in autumn, or the Russian peasants remark that, when the first snow has fallen upon an already frozen ground, the snow will lie late in the spring, that the spring will be cool, there is scientific observation in such prophecies, and that recent researches have decided in favor of these practical observers.

I take the liberty of bringing before your readers another weather period. The opinion of the early Canadian settlers, and one that would seem to deserve further investigation, was that the general direction of the wind at the equinoxes (in consequence the general state of the weather as to heat and moisture, cloud and sunshine, etc.) indicated the general condition of the weather during the following three months, respectively.

As a contribution to the elucidation of what modicum of truth there may be in this method of forecasting the weather by the Canadian voyageurs, I have tabulated below, the direction of the wind at the equinoxes from 1895 downward, and the number of days following such equinox, during which the wind blew in the same general direction. Temperature and precipitation might be given also, but at this time I will refrain from troubling your readers with any further details.

Equinoxes.		No. of days the same wind prevailed during the next three months.
Date.	Direction of wind.	
1895.		
March 21	se.	50
Sept. 22	sw.	65
1896		
March 21	nw.	27
Sept. 22	n.	23
1897.		
March 21	ne.	45
Sept. 22	se.	34
1898.		
March 21	se.	50
Sept. 22	sw.	58

NOTE.—The figures given in this table seem to show that during ninety days following the March equinox the prevailing wind was that required by the rule on 172 out of 360 oc-

casions. For the September equinox the agreement was 181 out of 360. The southeast and northwest winds in this region of the continent are by far the most frequent of all that occur, but the preceding figures show that the equinox does not appreciably control the wind.—ED.

CLIMATE AND CROP SERVICE PUBLICATIONS.

By JAMES BERRY, Chief of Climate and Crop Division.

Soon after the present Chief of the Weather Bureau assumed charge of the service he set about to accomplish what had long been considered most desirable and important in connection with the publication of the climatological data collected through the various State weather services in cooperation with the National Weather Bureau, viz, the issue of the monthly reports in a uniform style after an approved pattern. The monthly reports of the various State weather services up to 1896 were printed by the stencil plate and milliograph process. They were inelegant in appearance, of various forms and sizes, lacked agreement in arrangement and character of the data, and in only one or two cases contained graphic illustrations of meteorological conditions.

In January, 1896, the Chief of Bureau, desiring to emphasize the distinction between the terms climate and weather, as also the fact that the Weather Bureau and not the respective States was responsible for the work, announced in official instructions that the division formerly entitled State Weather Service, having charge of the local services, should be designated the Climate and Crop Division, and that each local service should be known as a State Section of the Climate and Crop Service of the Weather Bureau. Careful attention was devoted to the matter of designing a model form of publication for all sections, and the one adopted was of the size of the general MONTHLY WEATHER REVIEW. It provided for tables containing current means and normals of temperature and precipitation, extremes of temperature, altitude of stations, daily readings of maximum and minimum thermometers and daily precipitation for all stations, charts of temperature and precipitation, and several pages devoted to a general discussion of the various meteorological elements and miscellaneous weather phenomena.

The first report according to the new model was that for February, 1896, for the New England section, issued at Boston. Pennsylvania followed in the succeeding month, and as quickly as possible other section reports were issued after the adopted standard. Many difficulties lay in the way of making the section reports uniform, even where the necessary means for printing were available, as several States had by legislative enactment provided for the printing of the reports of State Weather Services, and the State directors were not all disposed to depart from the form in which their previous reports had been issued. By the close of 1897, however, nearly one-half of the sections had adopted the new model, and by October, 1898, all were issuing reports uniform in size, while the arrangement of data was identical in all but two, these exceptions being New York and Iowa, the reports of which, although differing slightly in minor details, contained the same information.

At the present time the Climate and Crop Service of the Weather Bureau is divided into 42 sections, independent of those for Porto Rico and Cuba. Therefore, 42 quarto publications are issued every month, containing accurate and detailed reports of observations made daily throughout the year at more than 3,000 voluntary stations. Not only has the form of the publication been standardized, but the instrumental equipment of the voluntary observers and the exposure of the instruments have received most careful attention. Nearly all voluntary observers are now supplied with instruments of the most approved pattern, and during the past two years a large proportion have been supplied with approved thermometer shelters.

The monthly editions of the section reports for the various States range from 300 to 3,000 copies. These are distributed to cooperating observers, scientific institutions, libraries and newspapers, each section center receiving and carefully preserving the reports for all other sections.

A file of these reports supplies a vast fund of meteorological information for the purposes of study and investigation.

The work of establishing Climate and Crop Sections in Porto Rico and Cuba is well advanced, an ample number of instruments to equip a complete system of stations having been sent into these islands. About 30 stations have already been established in Porto Rico, where the issue of weekly Climate and Crop Bulletins was begun in January of this year. At an early date the monthly report of the Porto Rico section in the standard form is expected. In Cuba the conditions have been less favorable for this work, but much progress has been made, and no doubt before the close of the year both weekly and monthly reports after the standard type will be issued for that island also.

RECENT PAPERS BEARING ON METEOROLOGY.

W. F. R. PHILLIPS, in charge of Library, etc.

The subjoined list of titles has been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers or other communications bearing on meteorology or cognate branches of science. This is not a complete index of the meteorological contents of all the journals from which it has been compiled; it shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau:

Meteorologische Zeitschrift, Wien, Band 16.

Satke, L. Fünfjährige Beobachtungen der Temperatur der Schneedecke in Tarnopol. P. 97.

Westman, J. Täglicher Gang der resultirenden Luftströmung an der Erdoberfläche zu Upsala 1891–1895. P. 107.

Maurer, J. Einige Ergebnisse der sechsten internationalen Ballonfahrt am 3 Oktober, 1898. P. 110.

Bezold, W. v. Bemerkungen zu der Abhandlung des Herrn. "Ueber Spät- und Frühfröste." P. 114.

Supper, K. Resultat der meteorologischen Beobachtungen in der Republik Guatemala im Jahre 1897. P. 117.

Tippenhauer, G. Ueber die Ursache der doppelten täglichen Oscillation des Barometers. P. 120.

———Ergebnisse der meteorologischen Beobachtungen auf dem Mont Ventoux im Jahre 1897. P. 123.

———Resultate der meteorologischen Beobachtungen in Buëa am Kamerun-Gebirge. P. 123.

Davis, W. M. "Helm Wind" Beobachtet in den Cevennen. P. 124.

Madsen, C. L. Ein Beitrag zur Erklärung von abnormalen Temperaturverhältnissen im nördlichen Europa. P. 125.

———Blitzschäden im Jahr 1897 in Steiermark, Kärnthen und Oberkrain. P. 128.

Prohaska, K. Ueber die Fortpflanzungsgeschwindigkeit der Gewitter in Steiermark, Kärthen und Oberkrain. P. 129.

Hegyfoky, J. Bemerkung zu dem Referate "Hegyfoky, J., Wasserstand der Flüsse und Niederschlag in Ungarn." P. 130.

Hann, J. Der Charakter der Winter der letzten 70 Jahre in Wien. P. 132.

———Temperatur und Luftdruck-Mittel für Tokio. P. 134.

———Täglicher Gang des Barometers zu Sao Paulo. P. 136.

Harrington, M. W. Mittlerer Regenfall in San Juan de Porto Rico. P. 135.

———Meteorologisches aus Bolivien. P. 136.

Fischer, F. Erwiderung. P. 131.

Sitzungsberichte der k. p. Akad. der Wiss. zu Berlin. 1899.

Ludeling, G. Ueber den täglichen Gang der erdmagnetischen Störungen an Polarstation. P. 236.